

#### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference A3-258PCT FOR FURTH		R ACTION See Form PCT/IPEA/416			
International application No. PCT/US2004/002820	International filing date 29.01.2004	(day/month/year)	Priority date (day/month/year) 29.01.2003		
International Patent Classification (IPC) or national classification and IPC H01R4/02					
Applicant MOLEX INCORPORATED et al.					
This report is the internation	onal preliminary examination re	eport, established by t	his International Preliminary Examining		
Authority under Article 35	and transmitted to the applicar	nt according to Article	36.		
2. This REPORT consists of	a total of 5 sheets, including t	his cover sheet.			
3. This report is also accom	panied by ANNEXES, comprisi	ng:	*		
	nt and to the International Bure				
sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).					
☐ sheets which sheyond the dis Supplemental	sclosure in the international app	which this Authority cor plication as filed, as in	nsiders contain an amendment that goes dicated in item 4 of Box No. I and the		
b. (sent to the Internal sequence listing a	ational Bureau only) a total of (i	computer readable for	ber of electronic carrier(s)) , containing a m only, as indicated in the Supplemental e Instructions).		
4. This report contains indic	ations relating to the following i	tems:			
☑ Box No. I Basis o	f the opinion				
☐ Box No. II Priority	the opinion				
	ablishment of opinion with rega	ard to novelty, inventiv	ve step and industrial applicability		
	unity of invention	ard to moreny, mremu	o otop and mademar applicability		
☑ Box No. V Reason	ed statement under Article 35(solity; citations and explanations				
☐ Box No. VI Certain	documents cited				
☐ Box No. VII Certain	defects in the international app	lication			
☐ Box No. VIII Certain	observations on the internation	nal application			
		T			
Date of submission of the demand		Date of completion of	this report		
23.07.2004		26.01.2005			
Name and mailing address of the international preliminary examining authority:		Authorized Officer	seches Patanzan,		
,		Corrales, D	The state of the s		
Fax: +31 70 340 - 30		Telephone No. +31 70	) 340-2645		

# 10/537926

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. POT/US2004002820

	Вох	x No. I Basis of the report				
1.		With regard to the <b>language</b> , this report is based on the international application in the language in which it was iled, unless otherwise indicated under this item.				
	<ul> <li>□ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:</li> <li>□ international search (under Rules 12.3 and 23.1(b))</li> <li>□ publication of the international application (under Rule 12.4)</li> <li>□ international preliminary examination (under Rules 55.2 and/or 55.3)</li> </ul>					
2.	have	With regard to the <b>elements*</b> of the international application, this report is based on <i>(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):</i>				
	Des	scription, Pages				
	1-6		as originally filed			
	Clai	ims, Numbers				
1-14 as originally filed		1	as originally filed			
Drawings, Sheets		wings, Sheets				
	1/8-8	8/8	as originally filed			
		a sequence listing and/or ar	ny related table(s) - see Supplemental Box Relating to Sequence Listing			
3.		<ul> <li>□ The amendments have resulted in the cancellation of:</li> <li>□ the description, pages</li> <li>□ the claims, Nos.</li> <li>□ the drawings, sheets/figs</li> <li>□ the sequence listing (specify):</li> <li>□ any table(s) related to sequence listing (specify):</li> </ul>				
1.	had Supp		ecify):			
	*	If item 4 applies. so	ome or all of these sheets may be marked "superseded."			

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. PCT/US2004/002820

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N) Yes: Claims 1-14

No: Claims

Inventive step (IS) Yes: Claims 1-14

No: Claims

Industrial applicability (IA) Yes: Claims 1-14

No: Claims

2. Citations and explanations (Rule 70.7):

see separate sheet

#### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (SEPARATE SHEET)



PCT/US2004/002820

#### Re Item V.

1 The following documents are referred to in this communication:

D1: US 5 997 317 A (PEI WEN-CHUN ET AL) 7 December 1999 (1999-12-07)

2 Document D1, which is considered to represent the most relevant state of the art, discloses:

An electrical connector for connecting between an electronic component and a circuit board via a plurality of solder balls soldering onto the circuit board, comprising an insulative housing forming a mounting surface adjacent to the circuit board and a receiving surface for supporting the electronic component, the insulative housing defining a plurality of terminal channels extending through the mounting surface and the receiving surface; and a plurality of conductive terminals respectively received in the corresponding terminal channels, the terminals having a mounting portion to locate the solder ball

From this, the subject-matter of independent claim 1 and claim 8 differs in that:

The conductive terminal has a first wall, a second wall connecting with the first wall and a third wall connecting with the second wall opposite to the first wall, a mounting portion comprising a first horizontal portion extending and bending from one end of the first wall towards the third wall, and a second horizontal portion on the third wall and corresponding to the first horizontal portion towards the first wall, a gap defined between an end of the second horizontal portion and an end of the first horizontal portion near the second horizontal portion so that the first and second horizontal portions form a structure for locating the solder ball.

- 2.1 The subject-matter of claim 1 and claim 8 is therefore novel (Article 33(2) PCT) The problem to be solved by the present invention may be regarded as:
  - Providing a terminal with improved location and connection of a solder ball
- 2.2 The solution to this problem proposed in claim 1 and in claim 8 of the present

#### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (SEPARATE SHEET)

International application No.

PCT/US2004/002820

application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons:

The terminal provides in a simple manner an improved mounting portion for the solder ball. There is no hint for this solution in the prior art.

- 2.3 Claims 2-7 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.
- 2.4 Claims 9-14 are dependent on claim 8 and as such also meet the requirements of the PCT with respect to novelty and inventive step.
- 3. The invention relates to a conductive terminal and a connector with such terminals which have obviously an industrial applicability.

### PATENT COOPERATION TREAT



### PCT

b'd 2 5 JAN 2005 WIPO

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's A3-258PCT	file reference	FOR FURTHER ACTION	,
International application No. PCT/US2004/002820		International filing date (day/month/year) 29.01.2004	See Form PCT/IPEA/416  Priority date (day/month/year)
			29.01.2003
H01R4/02	lassification (IPC) or nation	onal classification and IPC	
A			
Applicant MOLEX INCORPO	DRATED at al		
	TATED et al.		
1. This report is the	he international prelim	inary examination report, cotablish	d by this International Preliminary Examining
2. This REPORT	r Article 35 and transm	inary examination report, establishe uitted to the applicant according to A	d by this International Preliminary Examining inticle 36.
	consists of a total of 5	Sheets, including this government	
a. $\Box$ sent to t	iso accompanied by A	NNEXES, comprising:	•
□ she	ets of the description	e International Bureau) a total of sh	neets, as follows:
and Adm	or sheets containing realistrative instructions	ciains and/or drawings which have I ectifications authorized by this Author).	been amended and are the basis of this report prity (see Rule 70.16 and Section 607 of the
□ Snea	RIS Which cuporoods -		
Sup	ond the disclosure in the plemental Box.	ne international application as filed,	y considers contain an amendment that goes as indicated in item 4 of Box No. I and the
v. u isent to t	TO International Deci-		
sequenci Box Rela	e listing and/or tables r	elated thereto, in computer readable	number of electronic carrier(s)) , containing a e form only, as indicated in the Supplemental rative Instructions)
	o quonto cion	elated thereto, in computer readable ng (see Section 802 of the Administ	rative Instructions).
<ol> <li>This report conta</li> </ol>	ains indications relating	to the following items:	
☑ Box No. I	Basis of the opinion		
☐ Box No. II	Priority		
☐ Box No. III	Non-establishment of	opinion with regard to novelty invo	ntive step and industrial applicability
☐ Box No. IV			
Box No. V	Reasoned statement applicability; citations	under Article 35(2) with regard to no and explanations supporting such s	ovelty, inventive step or industrial
☐ Box No. VI	Certain documents ci	led	statement
☐ Box No. VII	Certain defects in the	international application	
☐ Box No. VIII	Certain observations	on the international application	1
ate of submission of the			
	demand	Date of completion	of this report
3.07.2004			
		26.01.2005	
me and mailing address of the international eliminary examining authority:		Authorized Officer	
European Patent Office D.B. sous B.		atentiaan 2	assistant Petersten.
Tel. +31 70 3	140 - 2040 Tv. 24 054	Corrales, D	The state of the s
Fax: +31 70	340 - 3016		
		Telephone No. +31	/U 340-2645



International application No. PCT/US2004/002820

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-	Box No. I	Basis of the report	
1	With regard to the <b>language</b> , this report is based on the international application in the language in which it we filed, unless otherwise indicated under this item.		
		eport is based on translations from the original language into the following language, is the language of a translation furnished for the purposes of:	
	∟ pur	ernational search (under Rules 12.3 and 23.1(b))  Dication of the international application (under Rule 12.4)  ernational preliminary examination (under Rules 55.2 and/or 55.3)	
2	2. With regard to the elements* of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):		
	Description	, Pages	
	1-6	as originally filed	
	Claims, Nun	nbers	
	1-14	as originally filed	
	Drawings, S	heets	
	1/8-8/8	as originally filed	
	□ a seque	ence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing	
3.	☐ The am	endments have resulted in the cancellation of:	
	⊔ the o	description, pages claims, Nos.	
	☐ the c	frawings, sheets/figs	
	□ the s	sequence listing (specify): sable(s) related to sequence listing (specify):	
		· · · · · · · · · · · · · · · · · · ·	
١.	□ This rep     had not beer     Supplementa	ort has been established as if (some of) the amendments annexed to this report and listed below a made, since they have been considered to go beyond the disclosure as filed, as indicated in the last solutions.	
	☐ the d	escription, pages laims, Nos.	
	□ the d	rawings, sheets/figs	
	⊔ the s	equence listing <i>(specify)</i> : able(s) related to sequence listing <i>(specify)</i> :	
		···	
	ır ıten	n 4 applies, some or all of these sheets may be marked "superseded."	



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Yes: Claims

1-14

No: C

Claims

Yes: Claims

1-14

No: Claims

Industrial applicability (IA)

Yes: Claims

1-14

No: Claims

2. Citations and explanations (Rule 70.7):

see separate sheet

Inventive step (IS)



International application No.

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